

REMARKS

Reconsideration of the application as amended is respectfully requested.

Status of Claims

Claims 8-13, 15 and 33-35 are pending in the application, with claims 12 and 33 being the only independent claims. Claim 33 has been amended. Claims 34 and 35 have been added. No new matter has been added.

Overview of the Office Action

Claims 8-13 and 15 have been allowed.

Claim 33 stands rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6,523,948 (*Matsumoto*).

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The specification discloses an ink jet printer (100). In one embodiment, the printer (100) includes a recording head (2) for ejecting ink to a recording medium (99). The ink includes a cationic polymerization component and is curable when irradiated with light. The recording medium (99) is a film made of non-absorptive plastic. *See* Fig. 1; paragraphs [0009], [0060], [0084] and [0126] of the published specification.

The printer (100) also includes a light irradiation section (6) for irradiating UV irradiation as the light to the ink placed on the recording medium (99), and a humidity detecting section (5) for detecting humidity around the ink placed on the recording medium (99). *See Figs. 1 and 4; paragraphs [0009] and [0060] of the published specification.*

The printer (100) also includes a controller (20) for controlling irradiation of the light to be irradiated from the light irradiation section (6) on the basis of detected humidity detected by the humidity detecting section (5). The controller (20) controls the irradiation of the light so as to be higher in case the detected humidity is high, and controls the irradiation of the light so as to be lower in case the detected humidity is low. *See Fig. 5; paragraphs [0009], [0010], [0060] and [0081] of the published specification.*

Arguments

Independent Claim 33

Applicants respectfully submit that claim 33, as amended, is patentable over *Matsumoto* because *Matsumoto* fails to teach or suggest all of the limitations of claim 33.

In particular, *Matsumoto* fails to teach or suggest (1) detecting humidity around the ink placed on the recording medium with a humidity detecting section, and a controller for controlling irradiation of the light to be irradiated from a light irradiation section based on the detected humidity, and (2) the recording medium being a film made of non-absorptive plastic.

The Examiner contends that *Matsumoto* teaches:

“A controller (31, figure: 1) for controlling the irradiation of the UV light on the basis of the detected humidity. (See column: 12, line: 25-39, which discusses controlling output of drying units based upon humidity detected by humidity sensor, column: 13, line: 37-59, which discusses control of IR

diodes based on humidity and column: 14, lines: 39-56, which discusses control of UV light based on humidity.)" (Emphasis added)

It is respectfully submitted that the Examiner's interpretation is incorrect.

As explained in detail on pages 19-21 of the Response dated June 12, 2005, col. 12, lines 25-39 of *Matsumoto* discusses a first embodiment in which signals representing detected temperature and humidity are used to compensate for drive data to be applied to heating elements (27) of a thermal head (22). The heating elements (27) are used to preheat the recording medium (17). *See* col. 5, lines 11 and 12 of *Matsumoto*. The drive data are values according to ejected amount of ink, and are used for individually driving the heating elements (27). *See* col. 5, lines 20-25 of *Matsumoto*. Thus, this embodiment controls the heat output of the heating elements (27) mainly based on the ejected amount of ink. No UV light or UV curable ink is used in this embodiment.

Col. 13, lines 37-59 of *Matsumoto* discusses a second embodiment that controls heat output of infrared laser diodes (130) based on the ejected amount of ink, not on the basis of detected humidity. Again, no UV light or UV curable ink is used in this embodiment.

Col. 14, lines 39-56 of *Matsumoto* discusses a third embodiment that controls UV light output based on the ejected amount of ink, not on the basis of detected humidity.

Furthermore, according to the Examiner, col. 12, lines 30-40 of *Matsumoto* teaches temperature control based on humidity, and that this suggests "that if you have more humidity, you need higher irradiation or need longer time for drying or curing, and if you have less humidity, you need less irradiation or need less time for drying or curing." However, the approach of temperature control based on humidity differs fundamentally from controlling the

irradiation of light to cure ink, as in the present invention. The statements casually made by the Examiner of applying features used in one of these two very different approaches to the other has no basis in fact. This unsupported conclusion put forward by the Examiner cannot justifiably serve as a basis for rejecting claim 33.

Contrary to the Examiner's contention, *Matsumoto* does not teach or suggest a controller for controlling irradiation of light irradiated from a light irradiation section to cure ink ejected onto a recording medium based on humidity detected by a humidity detecting section, as recited in claim 1. As discussed above, *Matsumoto* uses the ejected amount of ink as the primary control parameter for controlling the heat/light output. There is no motivation to modify *Matsumoto* so as to use detected humidity around the ink placed on the recording medium as the primary control parameter for controlling irradiation of light.

The fact that something can be done is an insufficient basis to obviate an invention. Absent a motivation, *Matsumoto* can be modified in the way proposed in the Office Action only with impermissible hindsight based on the presently claimed invention.

In addition, *Matsumoto* does not teach or suggest using a film made of non-absorptive plastic as the recording medium. *Matsumoto* uses an absorptive recording medium. See col. 6, lines 24-26; col. 13, lines 10-13 of *Matsumoto*. Thus, *Matsumoto* actually teaches away from using a film made of non-absorptive plastic as the recording medium.

In view of the foregoing, withdrawal of the 35 U.S.C. 103(a) rejection of claim 33 is respectfully requested.

Claims 34 and 35

Claims 34 and 35 depend directly from independent claim 33 and, thus, each is allowable therewith.

In addition, these claims include features which serve to even more clearly distinguish the claimed invention over the prior art of record.

For example, claim 34 recites that "the film is capable of shrinking with heat." In contrast, *Matsumoto* does not teach or suggest using a heat shrinkable film as the recording medium. *Matsumoto* uses heat generated by the heating elements (27) to preheat the recording medium in order to quickly dry ink ejected on the recording medium. *See, e.g.*, col. 5, lines 16-19 of *Matsumoto*. If a heat shrinkable film were used as the recording medium in *Matsumoto*, the recording medium would be shrunk by the heat, resulting in poor image quality and/or defective conveyance of the recording medium during operation. Thus, *Matsumoto* teaches away from using a heat shrinkable film as the recording medium.

Conclusion

Based on all of the above, it is respectfully submitted that the application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

It is believed that no additional fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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Dated: May 8, 2006